



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

7/6/00

**MEMORANDUM**

**SUBJECT:** Vinclozolin: Drinking Water Levels of Concern Attributable to Vinclozolin Alone and Three Dicarboximide Fungicides Combined (Chemical I.D. No. 113201, DP Barcode D267147)

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This memorandum serves to document earlier communications involving carcinogenic Drinking Water Levels of Comparison (DWLOCs) calculated for 3,5-dichloroaniline (3,5-DCA) derived from Vinclozolin alone and from the following imide fungicides combined: Iprodione, Procymidone, and Vinclozolin. Three different scenarios of crops were included: currently registered; snap bean, canola, lettuce, and wine; and canola plus wine. DWLOCs were calculated at several levels of concern for 3,5-DCA derived from all three imides (from  $1-7 \times 10^{-6}$ ) and Vinclozolin alone (from  $1-3 \times 10^{-6}$ ). Please refer to Table 1 for a summary of the calculations used (column headings), exposure values, and DWLOCs. Only linear cancer risk is applicable to 3,5-DCA; the  $Q_1^*$  used to calculate DWLOCs was 0.0638 derived from p-chloroaniline.

**Table 1. Carcinogenic DWLOCs for 3,5-DCA Derived from Vinclozolin Alone and from Vinclozolin + Iprodione + Procymidone Combined**

Scenario	Level of Concern (LOC)	$A = \frac{LOC^a}{0.0638}$	B = Total <sup>b</sup> food + wine exposure (mg/kg/day)	Chronic Water exposure (m/k/d) (A - B = C)	D = Combined <sup>c</sup> (Vinclozolin alone) DWLOC $= \frac{C \times 70}{2 \times 0.001}$ (ppb)
Currently registered	$1 \times 10^{-6}$	$1.57 \times 10^{-5}$	$8.17 \times 10^{-6}$	$7.47 \times 10^{-6}$	0.26 (0.47)
	$2 \times 10^{-6}$	$3.13 \times 10^{-5}$		$2.31 \times 10^{-5}$	0.81 (1.0)
	$3 \times 10^{-6}$	$4.70 \times 10^{-5}$		$3.88 \times 10^{-5}$	1.4 (1.6)
	$4 \times 10^{-6}$	$6.27 \times 10^{-5}$		$5.45 \times 10^{-5}$	1.9
	$5 \times 10^{-6}$	$7.84 \times 10^{-5}$		$7.02 \times 10^{-5}$	2.5
	$6 \times 10^{-6}$	$9.40 \times 10^{-5}$		$8.58 \times 10^{-5}$	3.0
	$7 \times 10^{-6}$	$1.10 \times 10^{-4}$		$1.02 \times 10^{-4}$	3.6
Snap bean + canola + lettuce + wine	$1 \times 10^{-6}$	$1.57 \times 10^{-5}$	$7.62 \times 10^{-6}$	$8.10 \times 10^{-6}$	0.28 (0.54)
	$2 \times 10^{-6}$	$3.13 \times 10^{-5}$		$2.37 \times 10^{-5}$	0.83 (1.1)
	$3 \times 10^{-6}$	$4.70 \times 10^{-5}$		$3.94 \times 10^{-5}$	1.4 (1.6)
	$4 \times 10^{-6}$	$6.27 \times 10^{-5}$		$5.51 \times 10^{-5}$	1.9
	$5 \times 10^{-6}$	$7.84 \times 10^{-5}$		$7.08 \times 10^{-5}$	2.5
	$6 \times 10^{-6}$	$9.40 \times 10^{-5}$		$8.64 \times 10^{-5}$	3.0
	$7 \times 10^{-6}$	$1.10 \times 10^{-4}$		$1.02 \times 10^{-4}$	3.6
Canola + wine	$1 \times 10^{-6}$	$1.57 \times 10^{-5}$	$6.15 \times 10^{-6}$	$9.50 \times 10^{-6}$	0.33 (0.55)
	$2 \times 10^{-6}$	$3.13 \times 10^{-5}$		$2.51 \times 10^{-5}$	0.88 (1.1)
	$3 \times 10^{-6}$	$4.70 \times 10^{-5}$		$4.08 \times 10^{-5}$	1.4 (1.6)
	$4 \times 10^{-6}$	$6.27 \times 10^{-5}$		$5.65 \times 10^{-5}$	2.0
	$5 \times 10^{-6}$	$7.84 \times 10^{-5}$		$7.22 \times 10^{-5}$	2.5
	$6 \times 10^{-6}$	$9.40 \times 10^{-5}$		$8.78 \times 10^{-5}$	3.1
	$7 \times 10^{-6}$	$1.10 \times 10^{-4}$		$1.04 \times 10^{-4}$	3.6

<sup>a</sup>0.0638 is the  $Q_1$  for 3,5-DCA (derived from p-chloroaniline).

<sup>b</sup>Food exposure represents the sum of the DCA derived from food and wine treated with vinclozolin, procymidone, and iprodione.

<sup>c</sup>The amounts of exposure attributable to each chemical are as follows:

Scenario	3,5-DCA Exposure (mg/kg/day)			
	Iprodione	Procymidone	Vinclozolin	Total
Currently registered	$9.22 \times 10^{-8}$	$5.8 \times 10^{-6}$	$2.28 \times 10^{-6}$	$8.17 \times 10^{-6}$
Bean/canola/lettuce/wine	$9.22 \times 10^{-8}$	$5.8 \times 10^{-6}$	$1.73 \times 10^{-6}$	$7.62 \times 10^{-6}$
Canola/wine	$9.22 \times 10^{-8}$	$5.8 \times 10^{-6}$	$2.62 \times 10^{-7}$	$6.15 \times 10^{-6}$

The DWLOCs in Table 1 are to be compared with the most recently refined Estimated Environmental Concentrations (EECs) calculated for 3,5-DCA by the Environmental Fate and Effects Division.

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